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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/783,086	HAN ET AL.	
	Examiner	Art Unit	
	Edward T. La Barr	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-5,7-11,20-26,29-31,34-37 and 53-68* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-5,7-11,20-26,29-31,34-37, 53-57, 60-64 and 67-68* is/are rejected.

7)☒ Claim(s) *58,59,65 and 66* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant has cancelled claims **1, 6, 12-19, 27-28, 32-33 and 38-52.**

The following claims are pending:

Original claims: **10, 11 and 23**

Amended claims: **2-5, 7-9, 20-22, 24-26, 29-31 and 34-37**

New claims: **53-68**

Applicant has also made a typographical correction of the Specification.

Claim Objections

Claims 22 and 24 are objected to because of the following informalities: These claims as amended end seem to contain a typographical error, in that they end with the extraneous preposition "to." Examiner presumes from the context that a reading of these claims without this word was intended for purposes of examination on the merits. Appropriate correction is required.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims **2-5, 7-11, 23, 29-31, 34-37, 53, 55, 57, 60, 62 and 64** are rejected under 35 U.S.C. 102(b) as being anticipated by Haller et al. (US Pub. No. 2002/0107673).

Regarding Claim 2:

Hailer et al. disclose:

The computer program product of claim 1, wherein the program configures representative data of the movant solid shape as having a particular attribute in accordance with an attribute of the target solid shape (See e.g. paragraph [0081] where "...configuration in the part family..." is an "attribute" and See e.g. paragraph [0043] where "representative data" is a "descriptor attribute").

Regarding Claim 3:

Hailer et al. disclose:

The computer program product of claim 1, wherein the program configures the movant solid shape as having a particular size or dimension for compatibility with the target solid shape (See e.g. paragraph [0044] "The automated connection mechanism is driven by descriptors." e.g. "...parts are selected ... by matching ... attributes from feature ... with attributes of ... parts" e.g. paragraph [0051] "...mechanism reviews a list of valid lengths ... determines which length would provide the best fit...")

Regarding Claim 4:

Hailer et al. disclose:

The computer program product of claim 1, wherein the program configures the movant solid shape as having a particular position relative to the target solid shape (See e.g. paragraph [0081] "...positioning procedure..." See also e.g. paragraph [0007]

..automatically position (i.e. locate ...) a part with respect to a feature.")

Regarding Claim 5:

Hailer et al. disclose:

The computer program product of claim 1, wherein the progi:am configures the movant solid shape as having a particular physical orientation relative to the target solid shape (See e.g. paragraph [0081] "...align the part..." See also e.g. paragraph [0007] "...automatically position (i.e align) a part with respect to a feature.")

Regarding Claim 7:

Hailer et al. disclose:

The computer program product of claim 6, wherein the computer program configures representative data of the movant solid shape as having a particular attribute in accordance with a predetermined rule (See e.g. paragraph [0081] where "...configuration in the part family..." is an "attribute" and See e.g. paragraph [0043] where "representative data" is a "descriptor attribute.")

Regarding Claim 8:

Hailer et al. disclose:

The computer program product of claim 6, wherein the predetermined rule is used to configure the movant solid shape as a particular member of a class of solid shapes represented by a generic solid shape (See e.g. paragraph [0044] "...descriptor is later

used to find and retrieve a standard part." where retrieval of a standard part is configuring the movant solid shape as a particular member (i.e. standard part) of a class of solid shapes.)

Regarding Claim 9:

Hailer et al. disclose:

The computer program product of claim 6, wherein the program uses the predetermined rule to configure the movant solid shape as a preferred procurement item (See e.g. paragraph [0004] where a preferred procurement item is "existing inventory" or includes "only those parts that a corporation permits employees to purchase.")

Regarding Claim 10:

Hailer et al. disclose:

The computer program product of claim 9, wherein the program uses the predetermined rule to configure the movant solid shape as a preferred procurement item supplied by apreferred vendor (See e.g. paragraph [0004] where a preferred procurement item includes "only those parts that a corporation permits employees to purchase.")

Regarding Claim 11:

Hailer et al. disclose:

The computer program product of claim 9, wherein the program uses the predetermined rule to configure the movant solid shape as a preferred procurement item in accordance

with inventory or availability (See e.g. paragraph [0004] where a preferred procurement item is "existing inventory.")

Regarding Claim 23:

The computer program product of claim 20, wherein the procurement information indicates multiple candidate procurement items for the movant solid shape; and wherein the program determines a preferred procurement item for the movant solid shape (See e.g. paragraph [0004] where a preferred procurement item includes "only those parts that a corporation permits employees to purchase.")

Regarding Claim 29:

The system of claim 27, wherein the program configures the movant solid shape as having a particular size or dimension for compatibility with the target solid shape (See e.g. paragraph [0044] "The automated connection mechanism is driven by descriptors." e.g. "...parts are selected ... by matching ... attributes from feature ... with attributes of ... parts" e.g. paragraph [0051] "...mechanism reviews a list of valid lengths ... determines which length would provide the best fit...")

Regarding Claim 30:

Hailer et al. disclose:

The system of claim 27, wherein the program configures the movant solid shape as having a particular position relative to the target solid shape (See e.g. paragraph [0081]

"...positioning procedure..." See also e.g. paragraph [0007] "...automatically position (i.e. locate ...) a part with respect to a feature.")

Regarding Claim 31:

Haller et al. disclose:

The system of claim 27, wherein the program configures the movant solid shape as having a particular physical orientation relative to the target solid shape (See e.g. paragraph [0081] "...align the part..." See also e.g. paragraph [0007] "...automatically position (i.e .... align) a part with respect to a feature.")

Regarding Claim 34:

Haller et al. disclose:

The system of claim 32, wherein the predetermined rule is used to configure the movant solid shape as a particular member of a class of solid shapes represented by a generic solid shape (See e.g. paragraph [0044] "...descriptor is later used to find and retrieve a standard part." where retrieval of a standard part is configuring the movant solid shape as a particular member (i.e. standard part) of a class of solid shapes (parts).)

Regarding Claim 35:

Haller et al. disclose:

The system of claim 32, wherein the program uses the predetermined rule to configure the movant solid shape as a preferred procurement item (See e.g. paragraph [0004]

where a preferred procurement item is "existing inventory" or includes "only those parts that a corporation permits employees to purchase.")

Regarding Claim 36:

Haller et al. disclose:

The.system of claim 35, wherein the program uses the predetermined rule to configure the movant solid shape as a preferred procurement item supplied by a preferred vendor (See e.g. paragraph [0004] where a preferred procurement item includes "only those parts that a corporation permits employees to purchase.")

Regarding Claim 37:

Haller et al. disclose:

The system of claim 35, wherein the program uses the predetermined rule to configure the movant solid shape as a preferred procurement item in accordance with inventory or availability (See e.g. paragraph [0004] where a preferred procurement item is "existing inventory.")

Regarding Claim 53. (New)

Haller et al. disclose a computer program product which provides a visual depiction of a three dimensional object upon a display device, the program comprising computer readable coded instructions stored in a memory, the computer readable coded instructions being executable on a processor to which information is input via a

user input device, (See e.g. paragraphs [0036] and [0085]) wherein when executed the computer program:

makes a selection of at least one candidate connector object of multiple possible connector objects of a target solid shape for matching with a particular connector object of a movant solid shape, the selection being based on connector object information of the at least one candidate connector object and the particular connector object of the movant solid shape,

The following paragraphs of Haller, et al., for example, teach these limitations:

Haller, et al. par. [0002] "An assembly design contains various shapes (e.g., fillets, extrusions, and holes), hereinafter referred to as features. Many times, features are designed with the intent of providing a connection to a particular part. For example, a hole is a feature and may be designed as a connection for a fastener. The design engineer, when designing the hole, typically designs the hole with a specific fastener in mind, which in many cases, is an industry standard part."

Haller, et al. par. [0043] "In one embodiment, the descriptor is a set of attributes that when taken together may be conceptualized as a descriptive text string. For example, the string 'ANSI inch ¼" socket head cap screw 1.85" through hole' represents descriptor attributes for a standard size, type , and length, which together contain design intent of a hole feature."

Haller, et al. par. [0056] "When more than one feature is to be populated, the assembly model is analyzed to determine what features are present (step 704). Features are recognizable because the process that generates the features stores a tag

that identifies the features (e.g., holes, fillets and extrusions). As each feature is recognized, a filtering process collects identifiers for all features that have attributes determined to be appropriate due to the scope of the search (step 706). Examples of such features with appropriate attributes may be all holes having an attribute that contains the string "standard," all holes have descriptors, or all cylindrical extrusion cuts. For those features having appropriate attributes, a collection and sorting process forms logical groups of features that have similar geometry and attributes (step 708).

Here, Haller, et al. disclose wherein at least one candidate connector object (i.e. "feature" e.g. "hole") of multiple possible connector objects ("more than one feature") of a target solid shape ("assembly model") is selected for matching ("feature is to be populated" here, features are matched to fasteners) with a particular connector object of a movant solid shape (e.g. "fastener") the selection ("filtering process") being based on connector object information (e.g. "standard" e.g. "through hole" e.g. "ANSI" etc.) of the at least one candidate connector object and the particular connector object of the movant solid shape,

and:

displays the target solid shape and the movant solid shape in accordance with the matching and in accordance with configuration information of at least one of the connector objects which are matched (See e.g. Figs. 10(a-c) where the matched shapes are oriented and displayed according to their configuration information as explained above.)

Regarding Claim 55. (New)

Haller, et al. disclose the computer program product of claim 53, wherein in positioning and displaying the movant solid shape and the target solid shape relative to one another, the program configures one of the movant solid shape and the target solid shape in accordance with the configuration information of at least one of the respective connector objects.

(See e.g. Haller, par. [0081] "When the part is dropped on the feature, the automated connection mechanism determines which configuration in the part family is the best fit for the feature upon which the graphical depiction is dropped, then creates an appropriate part." Here, the movant solid shape is dropped relative to the target. The program then configures the movant shape in accordance with the configuration information for the feature of the target object.)

Regarding Claim 57. (New)

Haller et al. disclose the computer program product of claim 53, wherein the program configures the movant solid shape as having a particular attribute in accordance with a predetermined rule.

(See e.g. Haller, par. [0081] "When the part is dropped on the feature, the automated connection mechanism determines which configuration in the part family is the best fit for the feature upon which the graphical depiction is dropped, then creates an appropriate part." Here, the movant solid shape is dropped relative to the target. The program then configures the movant shape in accordance with the configuration

information for the feature of the target object. The particular attribute is fit for the feature. The predetermined rule is to find the optimum configuration in the part family of the movant relative to the feature of the target.)

Regarding Claim 60. (New)

Haller et al. disclose a three dimensional geometric modeling system comprising:
a processor which executes a program comprising set of coded instructions stored in a memory;
a display device (See e.g. paragraphs [0036] and [0085]) upon which, when executed,

the program provides a visual depiction of a three dimensional object comprising at least one solid shape, a user input device for inputting information to the processor; (See e.g. Fig. 1) wherein the processor in executing the program, and in response to communication via the user input device of insertion of a movant solid shape into a context including a target solid shape:

makes a selection of at least one candidate connector object of multiple possible connector objects of a target solid shape for matching with a particular connector object of a movant solid shape, the selection being based on connector object information of the at least one candidate connector object and the particular connector object of the movant solid shape, the movant solid shape having one or more connector objects including the particular connector object;

The following paragraphs of Haller, et al., for example, teach these limitations:

Haller, et al. par. [0002] "An assembly design contains various shapes (e.g., fillets, extrusions, and holes), hereinafter referred to as features. Many times, features are designed with the intent of providing a connection to a particular part. For example, a hole is a feature and may be designed as a connection for a fastener. The design engineer, when designing the hole, typically designs the hole with a specific fastener in mind, which in many cases, is an industry standard part."

Haller, et al. par. [0043] "In one embodiment, the descriptor is a set of attributes that when taken together may be conceptualized as a descriptive text string. For example, the string 'ANSI inch ¼" socket head cap screw 1.85" through hole' represents descriptor attributes for a standard size, type , and length, which together contain design intent of a hole feature."

Haller, et al. par. [0056] "When more than one feature is to be populated, the assembly model is analyzed to determine what features are present (step 704). Features are recognizable because the process that generates the features stores a tag that identifies the features (e.g., holes, fillets and extrusions). As each feature is recognized, a filtering process collects identifiers for all features that have attributes determined to be appropriate due to the scope of the search (step 706). Examples of such features with appropriate attributes may be all holes having an attribute that contains the string "standard," all holes have descriptors, or all cylindrical extrusion cuts. For those features having appropriate attributes, a collection and sorting process forms logical groups of features that have similar geometry and attributes (step 708).

Here, Haller, et al. disclose wherein at least one candidate connector object (i.e. "feature" e.g. "hole") of multiple possible connector objects ("more than one feature") of a target solid shape ("assembly model") is selected for matching ("feature is to be populated" here, features are matched to fasteners) with a particular connector object of a movant solid shape (e.g. "fastener") the selection ("filtering process") being based on connector object information (e.g. "standard" e.g. "through hole" e.g. "ANSI" etc.) of the at least one candidate connector object and the particular connector object of the movant solid shape,

displays the target solid shape and the movant solid shape in accordance with the matching and in accordance with configuration information of at least one of the connector objects which are matched (See e.g. Figs. 10(a-c) where the matched shapes are oriented and displayed according to their configuration information as explained above.)

Regarding Claim 62. (New)

Haller, et al. disclose the modeling system of claim 60, wherein in positioning and displaying the movant solid shape and the target solid shape relative to one another, the program configures one of the movant solid shape and the target solid shape in accordance with the configuration information of at least one of the respective connector objects.

(See e.g. Haller, par. [0081] "When the part is dropped on the feature, the automated connection mechanism determines which configuration in the part family is

the best fit for the feature upon which the graphical depiction is dropped, then creates an appropriate part." Here, the movant solid shape is dropped relative to the target. The program then configures the movant shape in accordance with the configuration information for the feature of the target object.)

Regarding Claim 64. (New)

Haller et al. disclose the modeling system of claim 60, wherein the program configures the movant solid shape as having a particular attribute in accordance with a predetermined rule.

(See e.g. Haller, par. [0081] "When the part is dropped on the feature, the automated connection mechanism determines which configuration in the part family is the best fit for the feature upon which the graphical depiction is dropped, then creates an appropriate part." Here, the movant solid shape is dropped relative to the target. The program then configures the movant shape in accordance with the configuration information for the feature of the target object. The particular attribute is fit for the feature. The predetermined rule is to find the optimum configuration in the part family of the movant relative to the feature of the target.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 20-22, 24-26, 54, 56, 61 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haller et al. (US Pub. No. 2002/0107673) in view of Zuffante et al. (US Pat. No. 6,219,049).

Regarding Claim 20. (Currently Amended)

Haller et al. disclose the computer program product of claim 56, wherein the configuration information includes procurement information which enables the program to use the non-positional rule to determine a procurement item for the movant solid shape.

Applicant defines "non-positional rule" as follows: "By "non-positional" is meant rules that pertain to attributes other than size, positional orientation, or position in space." (See instant specification, paragraph [00082].) Applicant provides as examples part type, part number and vendor identity (See instant specification, paragraph [00082].)

Claim 56, depending from Claim 53, describes selection from among multiple connector objects of a target solid shape based on a non-positional rule. Claim 53 describes configuration information of at least one of the matched connector objects.

Haller configures parts with procurement information in that the engineer may be limited to specific purchase items in creating the design (See e.g. Haller, par. [0004] "only those parts that a corporation permits employees to purchase" and [0083] The parts library may be extendible. In addition to functionality that is currently available,

such as extending the part library by adding parts, a mechanism permits a design engineer to provide user-defined parametric connections that specify appropriate coupling relationships. A dialog box may be displayed to specify a descriptor for the part and to define the parametric connections. Additionally, the design engineer may modify the existing part library to reduce the number of parts that may be retrieved. Effectively reducing the size of the part library may be desirable to reflect existing inventory and to include only those parts that a corporation permits employees to purchase. To reduce the size of the part library, a part may be deleted or access to the part may be denied.)

Since the configuration information (procurement/vendor/etc) determines the validity of parts and thus the selections available to the user, this configuration information enables the program to use the non-positional rule (user choice) to determine a procurement item (part from the list) for the movant.

Regarding Claim 21. (Currently Amended)

Haller et al. disclose the computer program product of claim 20, wherein the procurement information indicates multiple candidate vendors for the movant solid shape; and wherein the program uses the non-positional rule to determines [SIC] a preferred vendor for the movant solid shape.

Applicant defines "non-positional rule" as follows: "By "non-positional" is meant rules that pertain to attributes other than size, positional orientation, or position in space." (See instant specification, paragraph [00082].) Applicant provides as examples

part type, part number and vendor identity (See instant specification, paragraph [00082].)

Claim 20, depending from Claim 56, describes selection from among multiple connector objects of a target solid shape based on a non-positional rule. Claim 53 describes configuration information of at least one of the matched connector objects.

Haller configures parts with vendor information in that the engineer may be limited to purchase certain parts, each of which must naturally be purchased from a particular vendor (See e.g. Haller, par. [0004] "only those parts that a corporation permits employees to purchase" and [0083] The parts library may be extendible. In addition to functionality that is currently available, such as extending the part library by adding parts, a mechanism permits a design engineer to provide user-defined parametric connections that specify appropriate coupling relationships. A dialog box may be displayed to specify a descriptor for the part and to define the parametric connections. Additionally, the design engineer may modify the existing part library to reduce the number of parts that may be retrieved. Effectively reducing the size of the part library may be desirable to reflect existing inventory and to include only those parts that a corporation permits employees to purchase. To reduce the size of the part library, a part may be deleted or access to the part may be denied.)

Since the configuration information (procurement/vendor/etc) determines the validity of parts and thus the selections available to the user, this configuration information enables the program to use the non-positional rule (user choice) to determine a preferred vendor (part from the list) for the movant.

Regarding Claim 22. (Currently Amended)

Haller et al. disclose the computer program product of claim 21, wherein the program determines a preferred vendor for the movant solid shape based on the non-positional rule to [SIC]

Applicant defines "non-positional rule" as follows: "By "non-positional" is meant rules that pertain to attributes other than size, positional orientation, or position in space." (See instant specification, paragraph [00082].) Applicant provides as examples part type, part number and vendor identity (See instant specification, paragraph [00082].)

Claim 21, depending from Claim 56 through intervening claims, describes selection from among multiple connector objects of a target solid shape based on a non-positional rule. Claim 53 describes configuration information of at least one of the matched connector objects.

Haller configures parts with preferred vendor information in that the engineer may be constrained to purchase only certain parts. Such a part is naturally purchased from a vendor, and this vendor is a preferred vendor because purchases are allowed from this vendor (See e.g. Haller, par. [0004] "only those parts that a corporation permits employees to purchase" and [0083] The parts library may be extendible. In addition to functionality that is currently available, such as extending the part library by adding parts, a mechanism permits a design engineer to provide user-defined parametric connections that specify appropriate coupling relationships. A dialog box may be displayed to specify a descriptor for the part and to define the parametric connections.

Additionally, the design engineer may modify the existing part library to reduce the number of parts that may be retrieved. Effectively reducing the size of the part library may be desirable to reflect existing inventory and to include only those parts that a corporation permits employees to purchase. To reduce the size of the part library, a part may be deleted or access to the part may be denied.)

Since the configuration information (procurement/vendor/etc) determines the validity of parts and thus the selections available to the user, this configuration information enables the program to use the non-positional rule (user choice) to determine a preferred vendor (part from the list) for the movant.

Regarding Claim 24. (Currently Amended)

Haller et al. disclose the computer program product of claim 56, wherein the program determines a preferred procurement item for the movant solid shape based on the non-positional rule to [SIC]

Applicant defines "non-positional rule" as follows: "By "non-positional" is meant rules that pertain to attributes other than size, positional orientation, or position in space." (See instant specification, paragraph [00082].) Applicant provides as examples part type, part number and vendor identity (See instant specification, paragraph [00082].)

Claim 56, describes selection from among multiple connector objects of a target solid shape based on a non-positional rule. Claim 53 describes configuration information of at least one of the matched connector objects.

Haller determines the configuration of parts with preferred procurement information in that engineers are permitted to purchase only specific parts by the program, following this non-positional, procurement rule (See e.g. Haller, par. [0004] "only those parts that a corporation permits employees to purchase" and [0083] The parts library may be extendible. In addition to functionality that is currently available, such as extending the part library by adding parts, a mechanism permits a design engineer to provide user-defined parametric connections that specify appropriate coupling relationships. A dialog box may be displayed to specify a descriptor for the part and to define the parametric connections. Additionally, the design engineer may modify the existing part library to reduce the number of parts that may be retrieved. Effectively reducing the size of the part library may be desirable to reflect existing inventory and to include only those parts that a corporation permits employees to purchase. To reduce the size of the part library, a part may be deleted or access to the part may be denied.)

Since the configuration information (procurement/vendor/etc) determines the validity of parts and thus the selections available to the user, this configuration information enables the program to use the non-positional rule (user choice) to determine a preferred vendor (part from the list) for the movant.

Regarding Claim 25. (Currently Amended)

Haller et al. disclose the computer program product of claim 24, wherein the non-positional rule relates to inventory criteria or availability criteria.

Applicant defines "non-positional rule" as follows: "By "non-positional" is meant rules

that pertain to attributes other than size, positional orientation, or position in space." (See instant specification, paragraph [00082].) Applicant provides as examples part type, part number and vendor identity (See instant specification, paragraph [00082].)

Claim 24, depending from Claim 56 through intervening claims, describes selection from among multiple connector objects of a target solid shape based on a non-positional rule. Claim 53 describes configuration information of at least one of the matched connector objects.

Haller configures parts with availability criteria in that the program of Haller only makes a certain subset of parts available to the engineer (See e.g. Haller, par. [0004] "only those parts that a corporation permits employees to purchase" and [0083] The parts library may be extendible. In addition to functionality that is currently available, such as extending the part library by adding parts, a mechanism permits a design engineer to provide user-defined parametric connections that specify appropriate coupling relationships. A dialog box may be displayed to specify a descriptor for the part and to define the parametric connections. Additionally, the design engineer may modify the existing part library to reduce the number of parts that may be retrieved. Effectively reducing the size of the part library may be desirable to reflect existing inventory and to include only those parts that a corporation permits employees to purchase. To reduce the size of the part library, a part may be deleted or access to the part may be denied.)

Since the configuration information (procurement/vendor/etc) determines the validity of parts and thus the selections available to the user, this configuration

information enables the program to use the non-positional rule (user choice) to determine a preferred vendor (part from the list) for the movant.

Regarding Claim 26. (Currently Amended)

Haller et al. disclose the computer program product of claim 24, wherein the the non-positional rule relates to vendor criteria.

Applicant defines "non-positional rule" as follows: "By "non-positional" is meant rules that pertain to attributes other than size, positional orientation, or position in space." (See instant specification, paragraph [00082].) Applicant provides as examples part type, part number and vendor identity (See instant specification, paragraph [00082].)

Claim 24, depending from Claim 56 through intervening claims, describes selection from among multiple connector objects of a target solid shape based on a non-positional rule. Claim 53 describes configuration information of at least one of the matched connector objects.

Haller configures parts using vendor criteria in that the engineer is only allowed to select from a particular group of parts that the corporation permits employees to purchase. Purchased parts are naturally purchased from a vendor. Therefore, the purchase permission rule relates to vendor criteria (See e.g. Haller, par. [0004] "only those parts that a corporation permits employees to purchase" and [0083] The parts library may be extendible. In addition to functionality that is currently available, such as extending the part library by adding parts, a mechanism permits a design engineer to provide user-defined parametric connections that specify appropriate coupling

relationships. A dialog box may be displayed to specify a descriptor for the part and to define the parametric connections. Additionally, the design engineer may modify the existing part library to reduce the number of parts that may be retrieved. Effectively reducing the size of the part library may be desirable to reflect existing inventory and to include only those parts that a corporation permits employees to purchase. To reduce the size of the part library, a part may be deleted or access to the part may be denied.)

Since the configuration information (procurement/vendor/etc) determines the validity of parts and thus the selections available to the user, this configuration information enables the program to use the non-positional rule (user choice) to determine a preferred vendor (part from the list) for the movant.

Regarding Claim 54. (New)

Haller, et al. do not explicitly disclose the computer program product of claim 53, wherein when multiple candidate connector objects of the target solid shape exist, the program makes a selection from among the multiple candidate connector objects based on a predetermined rule.

However, Zuffante et al. disclose these limitations (See e.g. col. 19 line 30 – col. 20 line 63, especially col. 19 ll. 41-50, col. 20 ll 1-6, ll 15-17 and ll. 56-63

[19/41-50] "selection of the shank feature of the flange-bolt component in the graphical browser portion would result in recognition of the presence of a cylindrical face geometry ... of the shank. If the ..

[20/15-17]"...component can be analyzed to define a characteristic set of geometries for that component. Thus, a bolt may include characteristic geometries for a cylinder for the shank and characteristic geometries of a plane for the face under the bolt's cap. The system can then look for complementary geometries in a different component to determine appropriate mating scenarios."

[20/3-6] ...a bolt could be depicted with the head above the surface of a hole, or with the head flush with the planar surface at the top of the hole. The system may permit the user to select between different possible mating scenarios..."

Here, for example, both the shank/cylinder and the face/plane of the bolt are connector objects. The program selects between mating the shank only and mating the face. The predetermined rule is to select the mating scenario based on input from the user. This object can be read as either the target or the candidate object; the corresponding connector objects would be the hole/cylinder and the surface/plane of the relative object.

It would have been obvious for persons having ordinary skill in the art at the time of invention to use a predetermined rule to choose from the plural connector objects of the target solid shape based on a predetermined rule. It was known that this approach has the advantage of allowing the user to alternate between different mating scenarios and permits the user to mate the feature to the component in previewed geometry (See e.g. Zuffante et al., abstract).

Regarding Claim 56. (New)

Haller, et al. do not explicitly disclose the computer program product of claim 53, wherein the program makes the selection from among the multiple appropriate connector objects based on a non-positional rule.

Applicant defines "non-positional rule" as follows: "By "non-positional" is meant rules that pertain to attributes other than size, positional orientation, or position in space." (See instant specification, paragraph [00082].) Applicant provides as examples part type, part number and vendor identity (See instant specification, paragraph [00082].)

See e.g. sections of Zuffante cited regarding Claim 54, wherein the predetermined rule, to choose from among the plural connector objects (here, shank/cylinder and face/plane) based upon user selection is a non-positional rule in that it does not pertain to size, positional orientation, or position in space.

Regarding Claim 61. (New)

Haller, et al. do not explicitly disclose modeling system of claim 60, wherein when multiple candidate connector objects of the target solid shape exist, the program makes a selection from among the multiple candidate connector objects based on a predetermined rule.

However, Zuffante et al. disclose these limitations (See e.g. col. 19 line 30 – col. 20 line 63, especially col. 19 ll. 41-50, col. 20 ll 1-6, ll 15-17 and ll. 56-63

[19/41-50] "selection of the shank feature of the flange-bolt component in the graphical browser portion would result in recognition of the presence of a cylindrical face geometry ... of the shank. If the ..

[20/15-17]"...component can be analyzed to define a characteristic set of geometries for that component. Thus, a bolt may include characteristic geometries for a cylinder for the shank and characteristic geometries of a plane for the face under the bolt's cap. The system can then look for complementary geometries in a different component to determine appropriate mating scenarios."

[20/3-6] ...a bolt could be depicted with the head above the surface of a hole, or with the head flush with the planar surface at the top of the hole. The system may permit the user to select between different possible mating scenarios..."

Here, for example, both the shank/cylinder and the face/plane of the bolt are connector objects. The program selects between mating the shank only and mating the face. The predetermined rule is to select the mating scenario based on input from the user. This object can be read as either the target or the candidate object; the corresponding connector objects would be the hole/cylinder and the surface/plane of the relative object.

It would have been obvious for persons having ordinary skill in the art at the time of invention to use a predetermined rule to choose from the plural connector objects of the target solid shape based on a predetermined rule. It was known that this approach has the advantage of allowing the user to alternate between different mating scenarios

and permits the user to mate the feature to the component in previewed geometry (See e.g. Zuffante et al., abstract).

Regarding Claim 63. (New)

Haller, et al. do not explicitly disclose the modeling system of claim 60, wherein the program makes the selection from among the multiple appropriate connector objects based on a non- positional rule.

Applicant defines "non-positional rule" as follows: "By "non-positional" is meant rules that pertain to attributes other than size, positional orientation, or position in space." (See instant specification, paragraph [00082].) Applicant provides as examples part type, part number and vendor identity (See instant specification, paragraph [00082].)

See e.g. sections of Zuffante cited regarding Claim 54, wherein the predetermined rule, to choose from among the plural connector objects (here, shank/cylinder and face/plane) based upon user selection is a non-positional rule in that it does not pertain to size, positional orientation, or position in space.

Claims 67 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haller et al. (US Pub. No. 2002/0107673).

Regarding Claim 67 (New)

As in the First Action regarding claim 3, Haller et al. disclose where the computer program product of claim 55, wherein the program configures representative data of the movant solid shape as having a particular attribute in accordance with an attribute of the target shape. (See e.g. Haller et al., paragraph [0044] "The automated connection mechanism is driven by descriptors." E.g. "...parts are selected ... by matching ... attributes from feature ...with attributes of ...parts" e.g. paragraph [0051] "...mechanism reviews a list of valid lengths ... determines which length would provide the best fit...") Thus, Haller discloses wherein the program configures the movant solid shape in accordance with the target shape. In this way, at least one movant solid shape from the library can be found to match the target solid shape.

In the instant claim, in substance, the target shape is configured in accordance with the movant shapes. In this way, at least one movant solid shape from the library can be found to match the target shape. Applicant has not disclosed that the alternative of modifying the target with respect to the movant solves any stated problem over the claim 3 arrangement, or is for any further particular purpose. Moreover, it appears that either arrangement would perform equally well for the purpose of matching at least one solid shape from the shape library to the target. Accordingly, a suggestion for matching the target to the movant is deemed to be a design consideration which fails to patentably distinguish over the prior art of Haller.

Regarding Claim 68 (New)

Claim 68 is a system claim disclosing substantially the same limitations as the computer program product of claim 67, and is rejected on the same grounds.

Allowable Subject Matter

Claims 58, 59, 65 and 66 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or suggest wherein the program makes the selection from among multiple appropriate connector objects based on a rule of a rule database, the rule database comprising or operating in conjunction with an enterprise resource planning (ERP) system, or based on a boundary condition criteria.

Response to Arguments

Applicants' remarks concerning patentability contain explanations directed toward new claims not treated in the First Action. However, where these remarks represent arguments differentiating the cited prior art from the instant claims, the arguments are addressed below. All other explanation by Applicants is addressed in the above rejections.

REGARDING NEW CLAIMS 53 and 60

Applicants argue that these claims require selection of at least one connector object of multiple possible connector objects of a target solid shape for matching with a particular connector object of a movant solid shape, based on connector object information of the objects, the movant shape having one or more connector objects, and that the Haller reference has no such teaching or suggestion. In support of this position, Applicants argue that Haller adds a new part to a feature which exists on a part already on the screen, and that Haller is feature-based, while the instant invention allows multiple connector objects on the movant to "shop" for appropriate existing connector objects for mating. This argument is nonpersuasive.

The rejections above reflect wherein Haller reads on these claims. Furthermore these claims, fairly read in light of the specification, do not limit the claimed invention to non-feature-based programs, accepting this characterization of Haller *arguendo*. In addition, the claims do not limit the invention to programs where the movant solid shape "shops" for an existing connector.

It should be noted that the argument that Applicants' invention differs from Haller because Haller deals with features existing on the screen seems to contradict the argument that Applicants' invention "shops" for an existing connector object for mating.

REGARDING NEW CLAIMS 54 and 61

Applicants argue that Haller does not involve eligibility of plural connector objects on an exisiting part and that Haller does not involve selecting from multiple candidates using a predetermined rule or a non-positional rule.

As the claims are rejected under Zuffante et al., these arguments are moot.

REGARDING NEW CLAIMS 58 and 65

While Applicants have addressed these arguments to claims 63 and 65, this argument seems to have been intended to address Claims 58 and 65 and the Examiner assumes this for purposes of this analysis.

Applicants note the limitations in these claims under the remarks, but do not advance an argument. Nevertheless, Examiner has indicated allowable subject matter under the terms above.

REGARDING NEW CLAIMS 59 and 66

While Applicants have addressed these arguments to claims 64 and 66, this argument seems to have been intended to address Claims 59 and 66 and the Examiner assumes this for purposes of this analysis.

Applicants note the limitations in these claims under the remarks, but do not advance an argument. Nevertheless, Examiner has indicated allowable subject matter under the terms above.

REGARDING NEW CLAIMS 67 and 68

Applicants argue that Haller et al. do not develop a suggestion for modifying the target solid shape so that an acceptable match can be found between the target solid shape and at least one solid shape from the shape library.

These claims have been rejected as developed in the above rejections.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward T. La Barr whose telephone number is (571)270-3237. The examiner can normally be reached on Monday-Friday, 9:00 a.m - 5:00 p.m., Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on (571) 272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ulka Chauhan/

Supervisory Patent Examiner, Art Unit 2628

ETL